

**CHAPTER I**  
**PERFORMANCE REVIEWS (CIVIL)**

**IRRIGATION AND FLOOD CONTROL AND MINOR  
IRRIGATION DEPARTMENTS**

**1.1 Accelerated Irrigation Benefits Programme**

**Highlights**

Accelerated Irrigation Benefits Programme was launched with the main objective of accelerating completion of on-going irrigation/multi-purpose projects on which substantial investment had already been made and beyond the resource capability of the State Government. Two major projects, one medium project and 453 minor irrigation projects in the State were included under AIBP during 2004-09. Till March 2009, only 413 minor irrigation projects were completed though substantial amount of investment of Rs.1,213.63 crore have been made on these projects. No evaluation studies were carried out to ascertain the success parameters and utilisation of the potential created in the State. As such, the objective of speedy development of irrigation potential and its eventual utilisation for the benefits of the farmers was not achieved to the desired extent in the State due to inherent deficiencies in planning, poor financial management, execution and monitoring of the projects.

Projects under AIBP in the State were being implemented without preparing any perspective plan and detailed project report. No major and medium projects could be completed despite spending Rs.1,085.60 crore.

(Paragraph 1.1.7)

Central funds were released by the State Government to the implementing agencies with delays ranging from 10 to 337 days.

(Paragraph 1.1.8)

Repair of crack developed in the retaining wall in a short span and department having no details of repair work raises doubt. The possibility of water sneaking into the weaker portions of the dam and breaching the dam in future could not be ruled out.

(Paragraph 1.1.9 (a) (i))

Payment amounting to Rs.15.27 crore released by two Khuga Canal divisions to 66 contractors (during July to October 2008) on hand receipts for construction of canals without any agreements and recorded measurements for the works appear to be fraudulent.

(Paragraph 1.1.9 (a) (iv))

Selection of incorrect alignment of canals has led to breaching of canal/failure of canal.

(Paragraphs 1.1.9(a) and (b))

**In Thoubal Multipurpose Project, there were number of irregularities noticed in non recovery of interest amount on mobilisation and machinery advances, undue benefit to contractor due to non-adoption of justified rates, unjustified closure of works, infructuous expenditure on syphon construction and there was doubtful payment without construction of any weir in a minor irrigation project.**

**(Paragraph 1.1.9 (b) and (c))**

**The department's claim of achieving irrigation potential of 41,130 hectares (51 per cent) against targeted irrigation potential of 81,264 hectares raises a question, as in Khuga Project, water was conveyed only for about 12 km against completed canal length of 59 km, while in Thoubal Project and the 13 minor irrigation projects physically verified during audit, water could flow in canals only during rainy seasons. Productivity of major crops in the State either remained stagnant or improved marginally during 2004-09, indicating that the programme had little impact on agriculture production of the State.**

**(Paragraphs 1.1.10)**

### ***1.1.1 Introduction***

Accelerated Irrigation Benefits Programme (AIBP) was launched by the Government of India (GOI) during 1996-97 to provide financial assistance to the States for accelerating the implementation of on-going irrigation projects on which substantial investment had already been made and which were beyond the resource capability of the State Governments. The scheme initially covered only major and medium irrigation projects, but was later extended to minor irrigation schemes during 1999-2000 for projects with irrigation potential of less than 2000 hectares. In the case of special category States, the central assistance comprised of 90 per cent of the project cost and the States were to contribute the remaining portion. In the State, the programme covered two major<sup>1</sup>, one medium<sup>2</sup> and 453 minor irrigation projects during 2004-09.

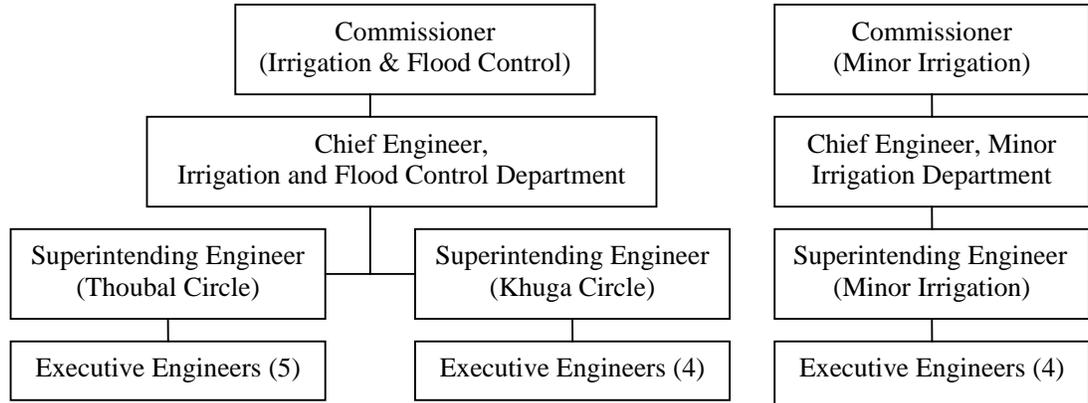
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<sup>1</sup> Thoubal Multipurpose Project and Khuga Multipurpose Project

<sup>2</sup> Dolaitabi Barrage Project.

### 1.1.2 Organisational Set up

Irrigation works under AIBP are executed by two departments viz. Irrigation and Flood Control Department (major and medium projects) and Minor Irrigation Department (minor irrigation projects). The organograms of the two departments are given below:



### 1.1.3 Scope of Audit

The performance review of the programme was carried out for the period 2004-09 during May to September 2009 covering the two major irrigation projects – the Khuga Multipurpose Project (KMP)<sup>3</sup> and the Thoubal Multipurpose Project (TMP)<sup>4</sup> under the Irrigation and Flood Control Department. In addition, 30 minor projects of the Minor Irrigation Department were test-checked. The review covered an expenditure of Rs.609.95 crore (61 per cent) out of the total expenditure of Rs.1,006.93 crore<sup>5</sup>.

### 1.1.4 Audit Objectives

The objectives of the performance review were to assess whether:

- planning of the projects was effective and the objective of the scheme were achieved;
- targeted irrigation potential was created;
- release and utilization of funds were done in a judicious and effective manner;
- implementation of the projects was done effectively, efficiently and economically; and
- monitoring and evaluation systems were functioning effectively.

<sup>3</sup> Implemented by Khuga Headworks Division, Khuga Spillway & Intake Division, Khuga Canal Division I and Khuga Canal Division II.

<sup>4</sup> Implemented by Thoubal Project Division I, II, IV and VI and Task Force Division

<sup>5</sup> Rs. 647.53 crore (Thoubal), Rs.349.70 (Khuga), and Rs. 9.70 crore (30 Minor Irrigation Projects)

### 1.1.5 Audit Criteria

Audit findings were benchmarked against the following criteria:

- Scheme guidelines;
- Detailed Projects Reports of the selected projects;
- Other circulars/instructions issued by Ministry of Water Resources and Central Water Commission, and
- General Financial Rules and Works Manuals.

### 1.1.6 Audit Methodology

The audit methodology included selection of projects based on simple random sampling without replacement method, holding of an entry conference (April 2009) with the officials of the departments, checking of records and documents of the selected offices, analysis of data and documentary evidences on the basis of audit criteria to arrive at audit findings, conclusions and recommendations. Audit findings were discussed with the departmental officers in an exit conference (October 2009) and their views, wherever available, had been incorporated in the review.

### Audit findings

The important points noticed in implementation of the programme are discussed in the succeeding paragraphs.

### 1.1.7 Planning

Planning is an integral part of programme implementation. The Department did not prepared any perspective plan for systemic implementation of the scheme under AIBP. The details of financial and physical status of the two major, one medium and 453 minor irrigation projects under AIBP in the State as on March 2009 are shown in the table below:

Table 1

(Rupees in crore)

Name of the projects	Estimated cost		Scheduled date of completion		Actual commencement of work	Total expenditure (March 2009)	Creation of irrigation potential (in hectare)	
	Original	Revised	Original	Revised			Target	Actual
Thoubal	47.25	715.81	1987	3/2009	1982	647.53	33,400	10,061
Khuga	15.00	381.28	1987	3/2010	1982-83	349.70	14,750	6,000
Dolaithabi	18.86	98.37	1996-97	2008-09	1992	88.37	7,545	Nil
Minor Irrigation	142.19	—	2009-10	—	2005-06	128.03	25,569	25,069
<b>Total</b>	<b>223.30</b>	<b>1195.46</b>				<b>1213.63</b>	<b>81,264</b>	<b>41,130</b>

Source: Departmental records

As can be seen from the above table, there was inordinate delay in completion of the major and medium irrigation projects. The revised cost of these projects has shot up by five to twenty five folds against the original estimated cost.

Detailed Project Report containing information about cropping pattern, detailed calculation of Benefit-Cost ratio, financial return, agriculture production in the under pre-project area and after completion of the project was not furnished to audit.

The main objective of the AIBP of speedy development of irrigation potential and its eventual utilisation for the benefit of the farmers, however, was not achieved due to poor planning for systematic implementation of the schemes and execution of works. As a result, against total target of irrigation potential of 81,264 hectares, only 41,130 hectares of irrigation potential was achieved as on March 2009.

### 1.1.8 Financial Management

The project-wise position of allotment of funds and expenditure during 2004-09 is shown in the table as below:

**Table 2**

(Rupees in crore)

Project	Funds released by Centre	Central funds released by State Govt.	State share released during 2004-09	Total funds made available	Total Expenditure**
(1)	(2)	(3)	(4)	(5)	(6)
Khuga	98.77	103.27*	77.16	180.43	181.67
Thoubal	291.66	263.70	131.31	395.01	418.54
Dolaithabi	65.96	34.92	27.14	62.06	62.06
Minor Irrigation	114.50	108.82	14.75	123.57	128.90
<b>Total</b>	<b>570.89</b>	<b>510.71</b>	<b>250.36</b>	<b>761.07</b>	<b>791.17</b>

\* includes carry forward balances of the previous years

\*\* Total Expenditure in column (6) is inclusive of sales tax, income tax *etc.* which are deductible from the contractor's bill through book-adjustment

Source: Departmental records

As seen from the table, the Government of India released a total of Rs.570.89 crore during the period 2004-09 for implementation of the two major, one medium and 453 minor irrigation projects. However, the State Government released only Rs.510.71 crore to the implementing agencies, withholding Rs.60.18 crore.

Test check also revealed that as against AIBP guidelines to release central assistances within 15 days of their receipt to the implementing agencies, the State Government released central funds with delays ranging from 165 to 206 days (Khuga Multipurpose Project), 10 to 337 days (Thoubal Multipurpose Project) and 10 to 252 days (Minor Irrigation projects).

#### (i) Rush of expenditure

As per General Financial Rules, money should not be spent hastily just to avoid the lapse of fund. It was, however, noticed that the Department incurred 16 to 71 *per cent* (Khuga), 23 to 67 *per cent* (Thoubal) and 11 to 46 *per cent* (Minor Irrigation) of the total expenditure in March alone, indicating that financial control mechanism as envisaged in the GFRs had not been exercised.

**(ii) Parking of funds**

Due to poor financial control, the following central funds was drawn and placed in '8449 – Other Deposits' and then withdrawn as follows:

- Rs.10.83 crore of Khuga Project deposited in March 2007, and withdrawn in piecemeal between July 2007 and July 2008;
- Rs.48.97 crore of Thoubal Project deposited between March 2007 and March 2009, and withdrawn between April 2007 and July 2009; and
- Rs.1.04 crore of Minor Irrigation projects deposited in March 2007, and withdrawn during March 2008.

AIBP funds were parked in this head of accounts on the instruction of the Finance Department to enable submission of utilisation certificates so as to obtain further AIBP funds from the Central Government. It was also noticed that subsequent withdrawals from the deposit head could only be withdrawn on the specific sanctions of the Finance Department.

Thus, release of Central funds was delayed and parking of funds hindered timely implementation of the projects.

**(iii) Diversion of funds**

Test check revealed that an amount of Rs.85.99 lakh of AIBP funds in respect of Minor Irrigation projects was utilized for other purposes *viz.*, purchase of petrol, photocopier machine, Maruti Gypsy, repair works, payment of electricity bills, wall fencing, approach road, remuneration of Work Charged and Muster Roll staff *etc.* resulting in diversion of AIBP funds.

The Department admitted (October 2009) the fact and stated that the amount would be recouped when the State funds were available. However, no information on recouping of the diverted amount had been intimated (December 2009).

**1.1.9 Programme Implementation**

Important audit findings noticed in two major and 30 minor irrigation projects selected in the review are discussed project-wise as below:

**(a) Khuga Multipurpose Project**

The project work commenced in 1982-83 and was scheduled to be completed by 1987, later revised to March 2010. As of March 2009, only the dam and spillway portion had been completed, and canals works of about 59 km (70 *per cent*) of 84 km of targeted length had been reported as completed, achieving partial irrigation potential of 6,000 hectares.

However, joint inspection (June/July 2009) revealed that the only about 46 km of canal work was completed. Water on right side main canal could be

conveyed up to 10 km though construction up to 40 km had been completed. On left side main canal, water could be conveyed up to 2.20 km, as work had been completed up to that point. However, as of August 2007 the Department had already incurred Rs.2.39 crore on works beyond 6.50 km. This expenditure will be infructuous till the intervening stretches of the canal are connected. There was also no detail of irrigation potential of 6,000 hectares claimed to have been created by 2008-09.

Audit findings noticed are as follows:

**(i) Sloughing down of the dam**

The top portion of the dam developed a crack apparently due to subsidence of the underneath layers soon after its completion in March 2009. During a joint inspection (May 2009), it was noticed that a portion of dam in the upstream side near the Spillway had sloughed down for about 10 metres in length, due to which the retaining wall above the dam was found cracked in two portions on the downstream side, as evident from the photograph below:



**Crack developed in the retaining wall**

During exit conference the Department stated (October 2009) that the defects had since been repaired. However, information regarding the amount involved, the design adopted, the man-power and technique used and the party who bore the cost of repairs could not be furnished. It is not clear how repairing work as serious as sloughing of dam could be done in such short time of six months and without department having any details of the repair work.

Thus, the prospect of 86.08 million cubic metres of water held by the dam gradually sneaking into the weak portions and breaching the dam at some point of time in future with catastrophic result cannot be ruled out.

**(ii) Selection of alignment of canals**

The alignment of the right side canal of the project for the first few kilometres was chosen at a higher level on the hill slopes, despite Executive Engineer's, Khuga Canal Division I observation (June 2004) that the alignment was three metres higher than designed and therefore could breach. The apprehension turned out to be correct, for on trial runs during June and July 2009 the

embankments of the right side canal breached at three places *i.e.* RD 3.1, 5.3 and 9 km, as shown in the photograph below:



**Breached canal of Khuga Project**

Further, alignment of canal at higher level also led to abandonment of micro hydel project that was included in the initial project design, as pressure head of water was reduced due to the incorrect canal alignment.

Thus, incorrect canal alignment not only led to breaching of canal at three places during trial run but also abandonment of micro hydel project. The objective of providing irrigation facilities was also frustrated.

**(iii) *Undue benefit to contractor***

For construction of right side main canal (RD 49.02 to RD 49.08 km) awarded (May 2000) to a local contractor, steel materials worth Rs.10.67 lakh had been issued to him. As the contractor neither took up the work nor returned the construction materials issued to him, cost of unreturned materials was recoverable at double the issue rate. However, no amount was recovered, resulting in undue benefit of Rs. 10.67 lakh to the contractor.

During exit conference the Department stated (October 2009) that they had sent circular to all the divisions of the department for effecting recovery of the dues from the contractor's payments available with them.

**(iv) *Suspected fraudulent expenditure***

During July to October 2008, two Divisions<sup>6</sup> released an amount of Rs.15.27 crore to 66 contractors on hand receipts for construction of canals at different stretches. However, there were no agreements and recorded measurements for the works stated to have been done by the contractors.

The Department stated (October 2009) that it released the payments on the hand receipts due to urgency of utilisation of the cheque drawal authority

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<sup>6</sup> Khuga Canal Division I and Khuga Canal Division II

within a limited period and the bills were prepared after the payments. The reply is not acceptable as there was no work order and no record of measurements in the measurement books for the works stated to have been executed and therefore, the payments appear to be fraudulent.

(v) **Power Component**

Although the department claimed to have achieved 40 per cent on the power component (3 x 500 KW) as a whole and 80 per cent on the civil construction works at a total expenditure of Rs.340.53 lakh, physical verification of the power house and electrical equipments did not corroborate the claim of the Department.

As of December 2009, the trifurcation penstock pipes have not yet been fitted, the motors were broken and some of the equipments stated to have been procured as early as 1991 were left uncared for in the open lawn for 18 years, as shown in the photographs below:



**Power House**



**Trifurcation penstock pipes**



**Broken motors**



**Transformers**



**Turbines**

**(vi) Water Supply Component**

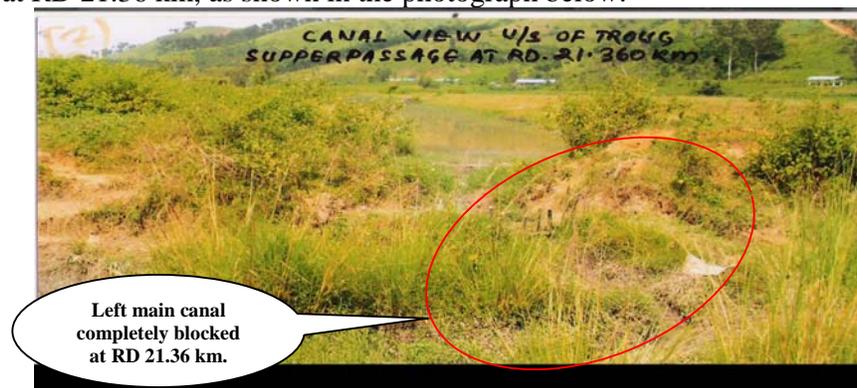
The water supply component<sup>7</sup> of the project was completed (February 1995) at a cost of Rs. 6.24 crore. However, during trial runs (February to May 1995) the delivery pipes failed. A vigilance enquiry (May 1997) pointed out design defects and it was decided that the work should be executed under the supervision of the Public Health Engineering Department. However, no rectification work had been taken up as of December 2009.

The initial decision to execute the water supply works by IFCD was incorrect as it did not possess the required technical experience, and led to not only wasteful expenditure of Rs. 6.24 crore but also deferring the intended benefits of providing drinking water facility to the 1.4 lakh inhabitants of Churachandpur town and its surrounding area.

The project scheduled to be completed by 1987 is still not complete even after 22 years, and is presently re-scheduled to be completed by March 2010. Till canal works are complete, the targeted irrigation potential of 14,750 hectares will not be achieved, despite completion of dam and spillway of the project.

**(b) Thoubal Multipurpose Project**

As of March 2009, only 60 per cent (dam), 70 per cent (spillway), 89 per cent (main canals) and 68 per cent (distribution system) had been completed. Joint inspection (August and September 2008) observed that though the left main canal had been constructed up to RD 24.418 km, water could be conveyed up to RD 13.939 km. during rainy season only. Beyond this point, the flow of water was hindered by siltation, weeds and grasses and was completely blocked at RD 21.36 km, as shown in the photograph below:



**Left side main canal blocked at RD 21.36 km.**

In the Charangpat Branch Canal though construction had been completed up to RD 6.30 km, water could be conveyed in this branch canal only during the rainy season as there was insufficient water during lean seasons. Other audit observations noticed are as follows:

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<sup>7</sup>Supply of 5 MGD by 1999-2000 to Churachandpur town.

**(i) Extra expenditure due to delay in payment of arbitration award**

An arbitration award of Rs.2.40 crore was to be paid (October 2008) to M/s Ansal Properties & Infrastructures Ltd. in respect of various claims raised by them, failing which the Department was liable to pay the contractor an interest at the rate of 18 *per cent* per annum from the date of award.

The Department requested (December 2008) for a cheque drawal authority for payment of the award. However, the Finance Department delayed issuing cheque drawal authority till 27 March 2009. Consequently, the Department had to pay an avoidable interest of Rs.18.36 lakh<sup>8</sup> to the contractor.

The arbitration award could have been paid from central fund of Rs.24.54 crore withhold by the State Government during 2008-09 and thus the interest payment could have been avoided.

**(ii) Recovery of interest**

Over the years the Department had given several mobilization and machinery advances to the contractors engaged in construction of the spillway. However, the Department did not recover the full interest amount due from the contractors. Test check of three running account (RA) bills<sup>9</sup> revealed that the department recovered Rs. four crore short from these RA bills, extending undue financial aid to the contractor. The Department stated (October 2009) that they would soon recover the balance amount. However, no recovery has been intimated as of December 2009.

**(iii) Undue benefit to contractor due to non-adoption of justified rates**

The Department made (April 2005) a second revision of rates of the balance works of the project and worked out a justifiable cost of Rs.289.72 crore (dam) and Rs.77.74 crore (spillway). These were done on the base price of 2005 by adopting the norms of cost control of CWC for working out a justifiable amount.

The firms, however, refused to execute the balance works at these amounts stating that they had to incur huge additional expenses due to adverse law and order situation. The Government ultimately approved the cost of the balance works at their negotiated rates of Rs.294.18 crore (dam) and Rs.78.90 crore (spillway). These were respectively Rs.4.46 crore and Rs.1.16 crore above the justified rates. This resulted in extending undue benefit of Rs.5.62 crore to the firms.

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<sup>8</sup> Of this, to the end of March 2009, the Department had paid Rs.14.30 lakh (Cheque No. D 059 530 dt. 26.3.09 – Rs.12.30 lakh and Cheque No. D 059 562 dt. 30.3.09 – Rs.2.00 lakh). A sum of Rs.4.06 lakh was adjusted by short recovery of Machinery Advance from the contractor in the 111<sup>th</sup> RA bill.

<sup>9</sup>Rs.57.55 lakh (101<sup>st</sup> RA bills), Rs.185.49 lakh (110<sup>th</sup> RA bills) and Rs.156.60 lakh (113<sup>th</sup> RA bills)

In another case, the Department sanctioned (February 2008) two extra items<sup>10</sup> in the Spillway and allowed rates higher than the justified rates giving an undue benefit of Rs.7.44 lakh to the contractor; of which Rs.4.47 lakh<sup>11</sup> had been so far paid as of July 2009.

The Department stated (October 2009) that in view of the disturbed situation under which the contractor was working the excess was negligible. The reply was not acceptable as by that time the Government had posted adequate security and good working atmosphere had been restored to the site.

**(iv) *Infructuous expenditure on shifting of canal alignment***

Contract of right main canal (November 1989) from RD 6 km. to 7 km was closed (January 1995) after payment of Rs.48.23 lakh and the balance work was awarded (December 2000) to another contractor and was paid a total amount of Rs.95.22 lakh<sup>12</sup> up to March 2007. However, during execution extensive sinking/depression of the canal banks were noticed at several places associated with heaving up of the adjoining paddy fields.

Geological Survey of India (GSI) advised (October 2004) to shift the alignment of the canal to a higher level as the soil conditions were unsuitable for canal alignment. The alignment was subsequently changed and work order for the new alignment was issued to a contractor in November 2006. Thus, the defective planning resulted in infructuous expenditure of Rs.1.43 crore on the old alignment.

The Department stated (October 2009) that soil testing was not generally done for canal embankments. The reply was not acceptable because GSI in a preliminary note had pointed out (April 1993) that the alignment between 5.9 to 7.3 km of the canal was not technically suitable. The Department while not considering the opinion of the GSI, awarded the balance work in December 2000, which led to infructuous expenditure of Rs.1.43 crore.

**(v) *Unjustified closure of works***

Three canal works awarded to three contractors were closed without any justification after execution of 45 to 95 *per cent* of the works and the remaining portions of the works were awarded to new contractors at rates much higher than those of the original contracts resulting in extra expenditure of Rs.3.77 crore as of March 2009. Had the works been completed through the original contractors, this extra expenditure could have been avoided.

The Department stated (October 2009) that the construction works on the right main canal was suspended on the advice (February 1994) of the then Chief Engineer. When the works was decided to be resumed, the contractors

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<sup>10</sup> Providing & fixing 25 mm dia anchors 2.5 M long dowel bars and Providing & fixing 25 mm dia anchors 3 M deep on Chute floor and anchored walls

<sup>11</sup> 1366 cum x (Rs.807 - Rs.782) + 7944 cum x (Rs.1718 - Rs.1666) = Rs.4.47 lakh

<sup>12</sup> up to 13th RA bill paid in March 2007

expressed their inability to continue at the old rates and the balance works were awarded to new contractors at the then prevailing market rates. Therefore, the extra expenditure was unavoidable. The reply was not acceptable as there were no justification for suspension of the works.

**(vi) *Infructuous expenditure on syphon construction***

A canal syphon constructed (August 2000) at RD 25.518 km at a total cost of Rs.1.30 crore on the left main canal did not serve any useful purpose as construction of the canal was discontinued (November 1995) from RD 24.418 km, about one kilometre ahead of the syphon.

The Department stated (October 2009) that the canal syphon was necessary for some “policy of the Department” and in consideration of the Wangjing River Project though construction of the left main canal beyond 24.418 km could not be taken up due to land dispute. However, the Department did not elaborate what “the policy of the Department” was and how a structure of the Thoubal Multipurpose Project had anything to do with another river project not connected with it.

**(vii) *Power Component***

The work of power component (3 X 2.50 MW) was awarded (June 1992) to a firm<sup>13</sup> at Rs.5.52 crore for completion by July 1994. The firm supplied power equipment worth Rs.2.90 crore up to November 1995 and was paid (April 1997) Rs.2.26 crore. Thereafter, no further supplies were made.

As the shed where the power equipment was kept was burnt down (July 2001) by militants, the equipment becoming unusable/obsolete by the time it is actually put to use after completion of dam cannot be ruled out.

The Department stated (October 2009) that the contract with the firm would be rescinded and works for acquiring the remaining electrical parts, construction of the power channel and construction of the power house had been initiated.

The project scheduled to be completed by 1987 could not be completed even after lapse of 22 years. The date of completion was last revised on March 2009. However, subsequent revision beyond this has not been furnished. Considering the pace of construction of the project, the prospect of realising irrigation potential of 33,400 hectares in near future looks bleak.

**(c) *Minor Irrigation Projects***

The State Government had completed 413 minor irrigation projects during 2004-09 with irrigation potential of 25,069 hectares. However, joint inspection (June/July 2008) of 13 minor irrigation projects (out of 30 projects selected in

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<sup>13</sup> M/S Triveni Engineering Ltd.

the review) revealed that in most of the sites visited the farmers were getting water mainly during rainy seasons and there was insufficient water during lean seasons. Other audit observation is as follows:

(i) **Construction of weirs**

“Construction of pick up weir across Kongba River at Karongthong near Khabeisoi” sanctioned under AIBP during 2005-06 was awarded<sup>14</sup> (April 2006) to a local contractor at Rs.13.75 lakh and had been paid Rs.13.72 lakh<sup>15</sup> up to March 2009. During 2007-08 the same work was included under AIBP and the work was again awarded (January 2008) to the same contractor at Rs.17.51 lakh and had been paid (February and March 2009) Rs.10.42 lakh<sup>16</sup>.

However, during field visit no structure was found at the stated site, except for a stack of about 2-3 truckloads of shingles, as shown below:



The Department stated (October 2009) that the work was taken up in two phases – the first phase for construction of coffer dam, cut off walls, side walls below the ground level, wing walls and dam floor, and the second phase for extra cut off wall, piers, slabs, shutters, apron and other super structures. The weir had been constructed at different site at the request of the local MLA and produced photographic evidence of construction of the work.

The reply of the department is not acceptable as in both the occasions proposals of funds and work orders were made for construction of weir at Karongthong and not at another location. Department’s contention of taking up the work in two phases is also not correct as the work was stated to have been completed in March 2007. Further, the Department could not specify the other location where the weir was constructed and the photographic evidence was that of a larger work of a barrage with provisions of gates/shutters and not that of a pick-up weir where gates/shutters are not to be fitted. Therefore, the possibility of payments of Rs.24.14 lakh without constructing any weir cannot be ruled out.

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<sup>14</sup> Agreement No.MID-III/Agri/2005-06/82 dated 14.4.2006

<sup>15</sup> 4<sup>th</sup> and final bill - 31.3.2009

<sup>16</sup> 18.2.2009: Rs.2.89 lakh and 31.3.2009: Rs.7.53 lakh

### 1.1.10 Impact assessment

The viability of irrigation schemes is measured by the economic benefits that would accrue to the beneficiaries through increase of irrigation. Against targeted irrigation potential of 81,264 hectares, only 41,130 hectares (51 per cent) had been created as of March 2009. Out of the irrigation potential created so far 61 per cent was from minor irrigation projects.

However, creation of irrigation potential of 41,130 hectares raises a question on the veracity of the achievement claimed by the Departments, as evident from the preceding paras. In Khuga Project, water was conveyed only for about 12 km against completed canal length of 59 km while in Thoubal Project and the 13 minor irrigation projects physically verified during audit, water could flow in canals only during rainy seasons.

Audit also analysed the success of the programme by measuring agricultural productivity in the State. Production of major crops in the State during 2004-09 is shown in the table below:

**Table 3**

(in thousand MT)

Year	Rice	Wheat	Maize	Pulses	Oilseeds	Sugarcane
2004-05	457	3	32	18	22	224
2005-06	393	5	29	20	22	237
2006-07	418	5	32	19	23	255
2007-08	516	5	32	21	25	263
2008-09	518	5	36	23	26	298

Source: Records of State Agriculture Department

As can be seen from the above table, crop productions have either remained stagnant or improved marginally during these years, and is indicative of the fact that irrigation potential created have marginal or no impact on the agriculture of the State.

### 1.1.11 Monitoring and Evaluation

As per guidelines, the Central Water Commission (CWC) was required to monitor the major projects through field visits at least twice a year. However, in respect of the two Projects only six such visits had been made by the CWC during 2003-09. The CWC observed that the length and discharge of the canals had been altered from the original plan which would alter the scope of the project, late release of central assistance, non-availability of adequate construction materials in time, and that funds were used on components not included in the AIBP. Monitoring of minor irrigation projects was to be done by the State Government through independent agencies periodically and assessed against pre-determined targets. However, no such monitoring was conducted. The Department stated (October 2009) that representatives of the Government, the Chief Engineer of the Department and the Executive Engineers concerned monitored the projects on earlier occasions. This was not acceptable as monitoring was to be done by independent agencies.

Monitoring of the programme was essential to judge extent of success or failure of projects and for taking remedial measures. However, no evaluation studies of AIBP were carried out to ascertain the success parameters and utilisation of the potential created in the State. Therefore, the much delayed major and medium projects needs more stringent monitoring.

#### **1.1.12 Conclusion**

The objective of speedy development of irrigation potential and its eventual utilisation for the benefit of the farmers was not achieved to the desired extent in the State, due to inherent deficiencies in planning, financial management, execution, major deficiencies in selection of canal alignments and monitoring. Funds were released with inordinate delays. The major projects had not been completed even after 22 years after the original schedule date of completion. Due to inordinate delay in completion of the major and medium projects, the latest estimated cost of the projects shot up by Rs. 1,114.35 crore, nearly 15 times of the original estimated cost. As against creation of total irrigation potential of 81,264 hectares, irrigation potential of 41,130 hectares (51 *per cent*) has only been created as of March 2009. Evaluation studies of AIBP were not carried out to ascertain the success parameters and utilisation of the potential created in the State.

#### **1.1.13 Recommendations**

- The Department should adopt adequate planning process for taking up/execution of projects so as to avoid cost and time over-run of project.
- Financial management should be streamlined to ensure timely release of available funds to the implementing agencies and avoid diversion of funds.
- Special efforts should be taken up for completion of projects on war footing so that targeted irrigation potential could be created timely for its eventual utilisation for the benefits of the farmers.
- Regular monitoring of the projects should be carried out by an agency independent of the construction agency. There should be regular evaluation to assess impact of the completed projects.

**PUBLIC HEALTH ENGINEERING DEPARTMENT**

**1.2 Accelerated Rural Water Supply Programme**

**Highlights**

The Accelerated Rural Water Supply Programme aimed at accelerating the coverage of uncovered habitations in rural areas with provision of safe and adequate drinking water, besides revival of traditional water sources. A performance review of the programme revealed poor planning, execution of works with time and cost overrun, inadequate monitoring of quality of water and short achievement of targeted objectives. Adequate drinking water was yet to be provided to 68 *per cent* habitations as of March 2009. Despite spending Rs.272 crore during 2004-09 on the programme, no evaluation studies had been carried out to ascertain the extent of the achievement of the objectives of the programme.

The significant audit findings are highlighted below:

There were significant deficiencies in the conduct of Habitation Survey which adversely affected the quality and reliability of the survey data, and thus its utility for planning purposes.

(Paragraph 1.2.7)

In the absence of adequate and detailed planning, works were taken up in an *ad hoc* fashion, without a clear prioritisation of problem habitations. This impacted the coverage of habitations, especially prioritisation of incomplete works and uncovered/partially covered habitations.

(Paragraph 1.2.8)

The State Government was deprived of Central assistance of Rs.39.10 crore due to late submission of proposals for second instalment and excess opening balances.

(Paragraph 1.2.9 (i))

Delay in completion of 94 schemes resulted in cost overrun of Rs.8.01 crore.

(Paragraph 1.2.10 (i))

The slip back of fully-covered habitations continued to be a major problem, thus, raising the issue of indefinite continuity of the programme.

(Paragraph 1.2.10 (iv))

### **1.2.1 Introduction**

The Accelerated Rural Water Supply Programme (ARWSP) was introduced by GOI in 1972-73 to assist the States and Union Territories with 100 *per cent* grants-in-aid to provide drinking water in problem villages<sup>17</sup>. This was withdrawn in 1974-75 with the introduction of the “Minimum Needs Programme” (MNP). However, as the MNP was not found satisfactory, ARWSP was re-introduced in 1977-78 to accelerate the pace of coverage of problem villages. The entire programme was given a mission approach with the introduction of the National Drinking Water Mission (NDWM) in 1986. The NDWM was renamed as Rajiv Gandhi National Drinking Water Mission (RGNDWM) in 1991 and covered ARWSP, sector reforms programme, submission projects and support services. The sector reforms programme, launched by the GOI on a pilot basis during 1999-2000, was modified and launched as Swajaldhara on 25 December 2002.

The objectives of the programme were as follows:

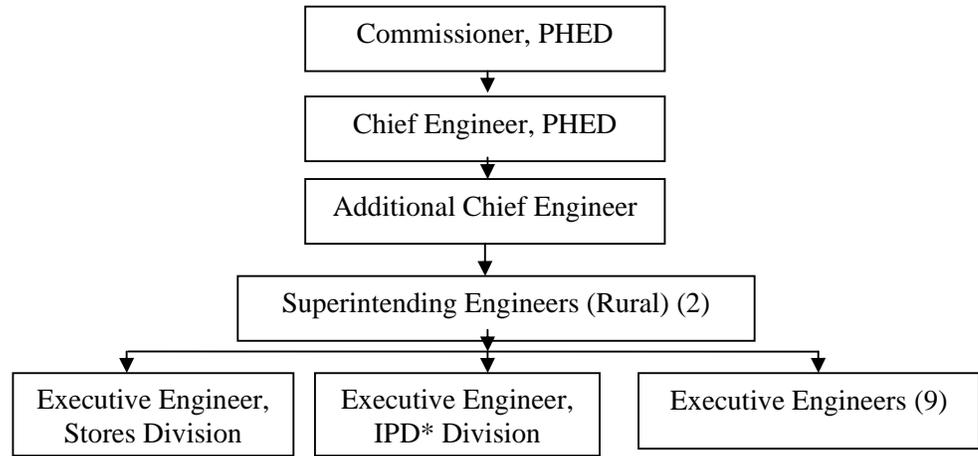
- To ensure coverage of all rural habitations with access to safe drinking water;
- To ensure sustainability of drinking water systems and sources;
- To tackle the problem of water quality in affected habitations; and
- To institutionalise the reform initiative in the rural drinking water supply sector.

### **1.2.2 Organisational Set up**

The Public Health Engineering Department (PHED) is the nodal department for implementation of the programme in the State with the Commissioner (PHED) as the Administrative Head. He is assisted by the Chief Engineer, who is the Head of the Department and assisted by an Additional Chief Engineer and two Superintending Engineers. At the district level, nine Executive Engineers are responsible for implementation of the programme. The organisational structure of the Department is given below:

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<sup>17</sup> Habitations not having a water source within 1.6 km (or within 100 m elevation in hilly areas) of its location, or habitations having a water source but affected with quality problems, or habitations where quantum of available safe water from any source is not enough to meet drinking and cooking need.



\* Investigation, planning and design

### 1.2.3 Scope of Audit

The implementation of the programme in the State during 2004-05 to 2008-09 was reviewed during April to June 2009 by a test check of the records of the Chief Engineer, PHED. Records of four districts<sup>18</sup>, out of nine districts implementing the programme and also Stores Division, Monitoring and Evaluation and IPD Division were selected by Simple Random Sampling Without Replacement (SRSWOR) method for detailed scrutiny, covering an expenditure of Rs.117.40 crore, out of a total expenditure of Rs.272.38 crore.

### 1.2.4 Audit Objectives

The main audit objectives were to assess whether:

- Survey of habitations was conducted effectively for authentic and reliable data;
- Projects under ARWSP were formulated in conformity with programme guidelines;
- Financial Control was sufficient and effective;
- Execution of schemes was done economically, efficiently and effectively;
- There was an adequate and effective mechanism at different levels for monitoring and evaluation of the scheme;
- The objective of the programme to provide rural habitation with safe drinking water was achieved.

### 1.2.5 Audit Criteria

Audit findings were benchmarked against the following audit criteria:

- Guidelines for implementation of ARWSP (August 2000);

<sup>18</sup> (i) Imphal East (ii) Bishnupur (iii) Ukhrul (iv) Churachandpur

- Guidelines on Survey of Drinking Water Supply Status in Rural Habitations (February 2003);
- Guidelines for National Rural Drinking Water Quality Monitoring and Surveillance Programme.

### ***1.2.6 Audit Methodology***

The methodology included selection of units/schemes based on SRSWOR method, holding of an entry conference (April 2009) with the Department, checking of the relevant records, analysis of the data and documentary evidence on the basis of audit criteria to arrive at audit findings, conclusions and recommendations. Joint physical verification of six schemes was also conducted. Audit findings were discussed with the Commissioner, PHED and other Departmental officials in an exit conference (September 2009) and the replies of the Department have been incorporated in the review at appropriate places.

### ***Audit Findings***

The important points noticed in the course of the review are discussed in the succeeding paragraphs.

### ***1.2.7 Status of Habitations***

For the effective implementation of Rural Water Supply Programmes, availability of basic data is an essential pre-requisite condition. For this purpose, the GOI issued (February 2003) detailed guidelines to conduct a survey in order to ascertain the status of the rural habitations with regard to availability of drinking water.

The survey work in the State started in 2003 through an NGO (Community Polytechnic Society, Imphal). However, the NGO, after a delay of more than three years, submitted the survey report to the GOI in December 2006. An amount of Rs.12.74 lakh was paid to the NGO for the survey. The delay was attributed (December 2009) by the Department, mainly to the adverse law and order problem in the State, and also due to the time taken in modifying and updating the survey data, which was necessary to correct the inconsistencies in the survey data.

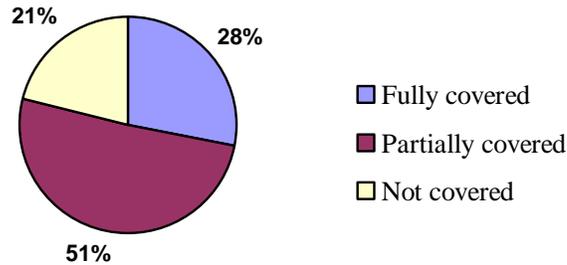
The above reasons do not justify the delay of the survey work by more than three years and indicates a slack attitude of the Department in planning the survey work. As per the survey report there was a total of 2,734 habitations<sup>19</sup> (FC-602, PC-1,293 and NC-839). However, the Department arrived at a total

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<sup>19</sup> Habitations include Fully Covered (FC): Habitations which receive 40 litres of water per capita per day (lpcd) and are located within 1.6 km of water source or at an elevation of 100 metres in hilly areas; Partially Covered (PC): Habitations which have a safe source within 1.6 km in plains and 100 metres in hill areas, but whose water availability ranges from 10 to 40 lpcd and Not Covered(NC): Habitations which do not have any water source within 1.6 km in plains and 100 metres in hill areas.

habitation of 2,870 habitations (FC-789, PC-1,467 and NC-614) after the necessary updation and modification as shown below.

**Status of coverage of habitations**  
**Total number of habitations=2,870**



However, audit scrutiny revealed the following deficiencies in the conduct of survey:

- No survey form was printed.
- Chief District Co-ordinators/Joint Co-ordinators were not appointed for the survey and training was not provided to the staff carrying out the survey.
- Detailed maps were not prepared.

Moreover, the stipulated five *per cent* test checks of the survey data by the supervisory officers at State/District level were not conducted. The Department stated (September 2009) that necessary five *per cent* test check was conducted. However, no documentary evidence could be produced to audit in support of their contention.

Thus, as the survey was not conducted as per the guidelines, the quality and reliability of the survey data could not be vouchsafed and therefore, its usefulness for planning purposes could not be ensured. Further, the delay in bringing out the survey report by more than three years had adverse implications in the interim changes in the status of habitations.

### **1.2.8 Planning**

The guidelines of ARWSP envisaged preparation of an Annual Action Plan (AAP) by the State Government within six months before the commencement of the financial year, to provide a framework for execution of the schemes and for monthly/quarterly monitoring of physical and financial progress. The AAP should give priority to completion of the incomplete works over taking up of new works, ensuring completion of works on schedule, indicating target of coverage of NC/PC habitations and also whether habitations would be covered fully or partially and population to be benefited indicating separately the SC/ST population.

While the AAPs were prepared at the State level, the Divisional level AAPs were not prepared. The AAPs did not indicate the shelf of schemes, likely size of allocations, and priority for completion of incomplete works over taking up of new works. Further, the AAPs were not prepared at the prescribed time schedule and funds were released by the GOI without any reference to the AAPs. The Department also did not prepare any revised AAP during 2004-09 on receipt of yearly fund allocation.

The Department accepted the fact (October 2009) that details of shelf of schemes, likely size of allocations, and priority for completion of incomplete works over taking up of new works were not indicated in the AAPs. Further, they admitted that the AAPs could not be prepared in time and assured that the AAP shall henceforth be prepared in time as per GOI's guidelines.

Thus, it is clear that in the absence of adequate and detailed planning, works were taken up in an *ad hoc* fashion, without a clear prioritisation of problem habitations. This had an adverse impact on the coverage of habitations, especially prioritisation of incomplete works and habitations with SC/ST population.

### 1.2.9 Financial Management

ARWSP is fully funded by the GOI. The State Government is required to match the funds released by the GOI on 1:1 basis under MNP. Under the ARWSP, 15 per cent of allocation is earmarked for operation and maintenance and 35 per cent is to be spent on the coverage of SC/ST habitations. 15 per cent of funds can be utilised to take up projects to tackle water quality problems and 5 per cent to ensure source sustainability.

#### (i) Allocation and utilisation of funds

The year-wise details of the GOI releases and expenditures under ARWSP and MNP during 2004-05 to 2008-09 are shown below.

**Table 1**

(Rupees in crore)

Year	Funds allocated by GOI	Funds released by		Expenditure		Savings (-)/ Excess (+)	
		GOI ARWSP	State MNP	ARWSP	MNP	ARWSP (per cent)	MNP (per cent)
2004-05	21.03	21.03	8.80	18.13	10.28	(-) 2.90 (14)	(+) 1.48 (17)
2005-06	34.31	27.03	11.15	18.61	15.32	(-) 8.42 (31)	(+) 4.17 (37)
2006-07	33.79	16.90	40.00	31.65	34.40	(+) 14.75 (87)	(-) 5.60 (14)
2007-08	45.59	45.59	36.27	33.00	29.67	(-) 12.59 (28)	(-) 6.60 (18)
2008-09	50.16	35.23	37.55	38.27	43.05	(+) 3.04 (9)	(+) 5.50 (15)
<b>Total</b>	<b>184.88</b>	<b>145.78</b>	<b>133.77</b>	<b>139.66</b>	<b>132.72</b>	<b>(-) 6.12 (4)</b>	<b>(-) 1.05 (1)</b>

Source: Departmental records

A detailed analysis of the table revealed that during 2004-09, out of the total receivable funding amount of Rs.184.88 crore from the GOI, the State Govt. received only Rs.145.78 crore. The short release was attributable to late submissions of proposals for release of second instalments and excess opening balances. The Department stated (September 2009) that the excess opening balances were due to late release of funds by the GOI and the State Finance

Department to the PHED at the fag end of the year. Resultantly, the Department could not spend the allocated fund during the year. The Department also added (October 2009) that the failure of the State Government in releasing the required state matching shares was responsible for short release of central funds.

Thus, the State Government was deprived of the benefit of Central assistance of Rs.39.10 crore.

### **1.2.10 Programme Implementation**

The year-wise targets for coverage of habitations and achievement there against during 2004-09 are shown below:

**Table 2**

Year	PC habitations			NC habitations		
	Target	Achievement	Shortfall (Per cent)	Target	Achievement	Shortfall (Per cent)
2004-05	80	56	24 (30)	20	14	6 (30)
2005-06	48	41	7 (15)	85	39	46 (54)
2006-07	172	104	68 (40)	204	74	130 (64)
2007-08	93	80	13 (14)	85	64	21 (25)
2008-09	184	89	95 (52)	60	26	34 (57)
<b>Total</b>	<b>577</b>	<b>370</b>	<b>207 (36)</b>	<b>454</b>	<b>217</b>	<b>237 (52)</b>

Source: Departmental records

It can be seen from the above table that out of 1,031(577 PC and 454 NC) habitations targeted for coverage during 2004-09, 587 (370 PC and 217 NC) habitations were covered during the period. Thus, there was a shortfall in coverage of habitations ranging between 25 and 64 *per cent* in respect of NC habitations and 14 and 52 *per cent* in respect of PC habitations.

The Department stated ( September 2009 ) that the shortfall was mainly due to inadequate funds, adverse law and order situation prevailing in the State, bad road connectivity from place to place, restrictions in movement of staff and machinery, frequent bandhs and blockades, and restrictions in transportation of pipes and other store materials from outside as well as inside the State. The Department's contention in regard to inadequate fund is not acceptable as even the released/available amounts were not fully utilised.

#### **(i) Execution of works**

Test check of records in five divisions (Bishnupur, Churachandpur, Imphal-East, Ukhrul and IPD) revealed that 94 Water supply schemes taken up at an estimated cost of Rs.7.72 crore were completed at a total cost of Rs.15.73 crore resulting in cost overrun of Rs.8.01 crore due to delay in completion of the works ranging from one to seven years. Further, scrutiny of the records pertaining to the four selected districts disclosed that the implementing divisions could not complete 127 schemes under ARWSP (approved prior to July 2006) up to the end of March 2009.

The Department stated (September 2009) that the main reasons for execution of works with cost and time overrun were non finalisation of tenders in time due to disputes among the tenderers, restriction in timely transportation of materials and short duration of working season and bad road connectivity.

The fact, however, remains that execution of works with cost and time overrun is an indication of lack of proper planning as the problems stated by the Department were known to them earlier and these should have been taken into account while formulating plans for execution of the schemes.

**(ii) *Drinking Water facilities in Rural Schools***

ARWSP Guidelines laid down that all rural Schools, Anganwadi Centres and Sub-centres were to be covered with drinking water facility by the end of Ninth Plan (31 March 2002). However, the department initiated no action for coverage of rural schools as of July 2009 and as such schools continued to be deprived of drinking water facility. The Department stated (September 2009) that steps have now been taken up by incorporating 273 schemes under Jalmani Programme (providing water to rural schools) and initiating Total Sanitation Campaign in various districts.

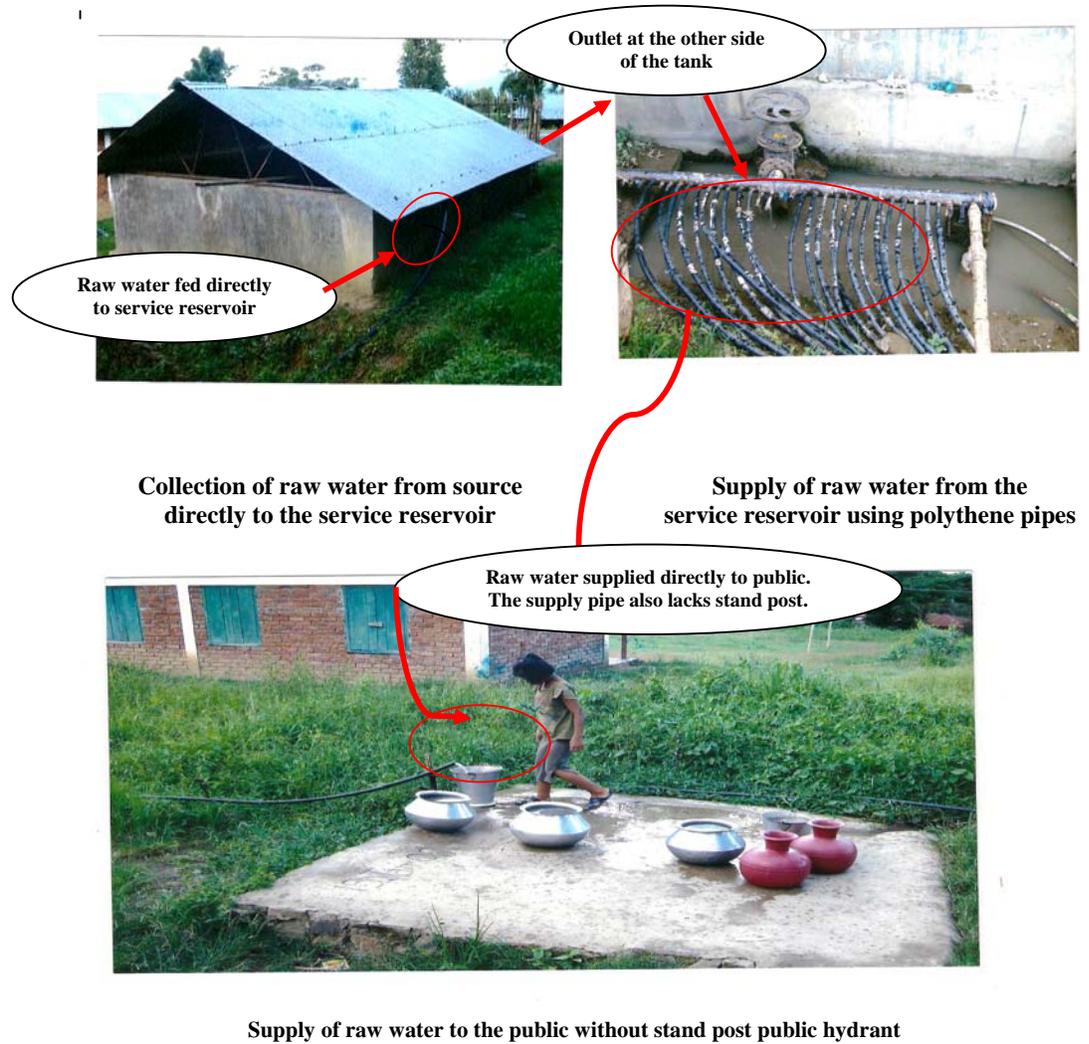
The fact, however, remains that due to delay in taking up the project in rural schools; no rural school was covered under this scheme during the period covered under audit.

**(iii) *Physical verification of Schemes***

In order to ascertain the operational position of schemes on ground, a joint inspection team of the audit and the representatives of the Department physically verified (July 2009) six water supply schemes in two districts – (Churachandpur-4 and Bishnupur-2). Out of the six schemes, four were working properly and in two schemes, the audit noticed shortcomings, details of which are discussed below:

**(a) ARWS Scheme/Rehabilitation of W.S. Scheme at Pearsonmun:**  
The scheme which was to cover a habitation (Pearsonmun) of 1,574 ST population (2001 census) was commissioned (March 2008) at a cost of Rs.19.77 lakh. The joint inspection team found the following shortcomings:

- Pipes carrying water to the Reservoir and distribution to the public were all Polythene pipes instead of GI pipes.
- Drinking water was distributed without any public hydrant.
- Raw Water from the source was directly collected to the Service reservoir.
- Settling tank and slow sand filter were not constructed.



The Department stated (October 2009) that polythene pipes were used due to shortage of G.I pipes. The fact, however, remains that as the raw water collected was directly supplied to the public without getting it passed to the settling tank and slow sand filter, the quality of water supplied to the public cannot be ensured as being free from harmful chemical and bacteriological elements. As such the villagers were exposed to the hazard of water borne diseases like cholera, typhoid and gastroenteritis.

**(b) ARWS Scheme at Potshangbam:** The scheme which was to cover habitation (Potshangbam) with population of 3,035 (2001 census) was commissioned in November 2008 at a cost of Rs.38.98 lakh. During joint inspection, it was found that the scheme was not functioning properly, as the pipe from the settling tank to the slow sand filter (SSF) was broken and the SSF was completely dried up, as shown in the photographs.



**Broken pipe between Settling Tank and Slow Sand Filter**

**Dried up Slow Sand Filter**

The Department stated (October 2009) that the scheme was handed over (November 2008) to the Potshangbam Water and Sanitation Committee for maintenance. Though, clearance of SSF was needed to be done periodically, the Committee did not have the technical skill to do the job. As such, they directly disconnected the pipes from the treatment unit and joined the raw water pipe directly to the distribution pipe. The Department further added that necessary training for operation and maintenance has been imparted to the Committee and the scheme is now functioning normally as per norms to make a sustainable method.

The reply is not acceptable as the schemes are to be maintained properly after its commissioning so as to tackle the problem of slip back and the schemes are to be handed over to the PRIs, cooperatives, women groups, Self Help Groups *etc.* for maintenance, only after imparting the essential technical know-how of their operation and maintenance.

**(iv) Slip back<sup>20</sup> of habitations**

The status of habitations, as on 1 April 2003 and 1 April 2009, is given in the table below:

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<sup>20</sup> Slip back means FC becoming PC or NC and PC becoming NC.

**Table 3**

Habitations	Status of Habitations (March 2003)	No of habitations covered during 2004-09	Expected total no. of habitations (March.2009)	Actual status of Habitations (March 2009)	Slip back
1	2	3	4	5	6
Fully Covered (FC)	789	587 habitations were converted to FC	1376	904	472
Partially Covered (PC)	1467	370 PC were converted to FC	1097	1378	281 FC slip-back to PC
Not Covered (NC)	614	217 NC were converted to FC	397	588	191 FC slip back to NC
<b>Total</b>	<b>2870</b>			<b>2870</b>	

Source: Departmental records

Thus, it is clear from the table that, 472 FC habitations slip-backed to PC and NC habitations as of March 2009. Neither reasons were recorded in the Departmental records nor the Department conducted any analysis of the reasons for slip-back of habitations from FC to PC/NC.

However, the Department stated (September 2009) that 15 *per cent* of funds provided for maintenance work were not enough, and in spite of handing over the completed schemes to the Panchayati Raj Institutions (PRIs) for maintenance, the PRIs did not take any interest and schemes handed over to them were to be taken back by the Department for maintenance. The Department further added that slip-back is a countrywide phenomenon and attributed it to drying up of water sources, meagre fund provided by the State and increase in population and assured that they were trying to control this issue.

The reply of the Department itself is an admission of the fact that if the issue of slip-back is not controlled properly, it would lead to indefinite continuation of the programme and also raise a question on the achievement of the scheme.

### ***1.2.11 Operation and Maintenance***

Guidelines provide that up to 15 *per cent* of the funds released every year under ARWSP to the States may be utilised for operation and maintenance of the existing Water Supply Schemes.

Test check of the records in four divisions revealed that during 2007-09, these divisions had incurred Rs.4.38 crore (Bishnupur-Rs.51.46 lakh, Churachanpur-Rs.104.40 lakh, Imphal East-Rs.153.76 lakh and Ukhrul-Rs.128 lakh) out of MNP funds on operation and maintenance of schemes by way of payment of salaries of work charged staff and Muster Roll wages. The divisions did not maintain any record regarding functional and non-functional schemes. As such, the extent of assets becoming non-functional due to non-maintenance could not be ascertained.

**1.2.12 Water Quality Monitoring and Surveillance**

**(i) Procurement and Distribution of Field Testing Kits**

ARWSP envisaged building capacity of Panchayats to own Field Test Kits and take up full operation and maintenance responsibility for water quality monitoring of all drinking water sources in their respective PRI areas. Further, hundred *per cent* testing of all sources at the village level was to be done by grass root level workers from Gram Panchayat (GP)/Village Water and Sanitation Committee.

It was, however, noticed in audit that no field testing kits were issued to GP level functionaries. As such, the objective of institutionalising water quality testing at the grass root level was not achieved. In response, the Department stated (December 2009) that Field Testing Kits were to be distributed to GP level functionaries after giving proper training to them and as no training was imparted to them during the period covered under audit; Field Testing Kits were not distributed.

Thus, delay in distribution of the Field Testing Kits by the Department to GP level functionaries would impact in realising the objective of institutionalising water quality testing at the grass root level.

**(ii) Establishment of Water Quality Laboratories and Institutions**

According to the ARWSP Guidelines, establishing of water quality laboratories, implemented at three levels, consisting of a nodal unit at the top level, intermediary level (district laboratories) and grass-root level units, should be one of the components of the water quality monitoring and surveillance programme and hundred *per cent* funding was to be provided to the States for strengthening water quality monitoring facilities. The Department identified (November 2006) the Ecology and Environment Wing (Forest and Environment Department) as State referral institute. However, it was found that no samples have so far been referred to the institute. Though the Department has a central Water Testing Laboratory at Lamphelpat, but at the intermediary and grassroots levels, there were no laboratories in the District and village levels. The position of water samples collected from the districts for conducting tests during 2004-09 by the Central Laboratory is given in Table below.

**Table 4**

Districts	Minimum number of samples to be tested as per norm	Number of samples collected and tested	Shortfall	Number of samples found to be potable water
Bishnupur	60	14	46	10
Thoubal	60	19	41	8
Tamenglong	60	Nil	60	Nil
Ukhrul	120	6	114	5
Churachandpur	600	9	591	4
Chandel	60	9	51	4
Senapati	120	8	112	6
Imphal East	120	10	110	8
Imphal West	60	Nil	60	Nil
<b>Total</b>	<b>1260</b>	<b>75</b>	<b>1185</b>	<b>45</b>

Source: Departmental records

As can be seen from the above table that during 2004-09, the Central Laboratory could collect and test only 75 (6 per cent) samples against prescribed norm of 1,260 samples and that, out of 75 samples collected and tested, only 45 were found to be potable. This illustrates that the quality of water which the Department supplied to the public for drinking was not safe. The Department stated (October 2009) that inadequate testing of water quality was mainly due to shortage of staff and lack of fund *etc.* and assured that it will look into the matter seriously and try to strengthen the water quality testing laboratory.

However, the fact remains that failure to ensure adequate testing of water quality is fraught with serious implications on health of the people and expose them to hazard of water borne diseases.

### **1.2.13 HRD and IEC activities**

As per ARWSP Guidelines, States were required to set up State Level Human Resource Development Cell (HRD Cell) aimed at empowerment of Panchayati Raj Institutions/Local bodies with the objective of enabling them to take up operation and maintenance activities related to rural water supply systems and also for capacity building of local communities by giving requisite Grass Root Level Training (GRLT). In addition, awareness programmes were to be taken up on water borne diseases through Information, Education and Communication (IEC) activities. However, audit found that there was no State level HRD cell and no training under GRLT was imparted. Thus, lack of HRD and IEC activities resulted in poor/negligible participation of the PRIs/Local bodies in operation and maintenance activities which impacted the implementation of the ARWSP schemes.

The Department stated (October 2009) that HRD Cell was discontinued after the establishment of Communication and Capacity Development Unit (CCDU) in 2006 and since then various IEC activities has been taken up. However, no documentary evidence for conduct of any HRD and IEC activity during 2004-09 could be produced to audit.

#### **1.2.14 Sustainability of water sources**

Guidelines provide that five *per cent* of ARWSP funds were to be kept aside for sustainability projects including ground water recharge and rain water harvesting. Different technological options need to be explored depending on the local requirement. The Department was to adopt and implement a model bill to regulate and control development of ground water, especially in water stressed areas.

Audit scrutiny, however, revealed that the Department had not passed and implemented the model bill for controlling development of ground water in stressed areas. No record for ground water based schemes was maintained. No fund was earmarked for sustainability. The Department accepted (October 2009) the fact and stated that they have no scheme for source sustainability as of now and further added that the augmentation of schemes has been taken up for the schemes which are affected by source depletion by identifying another perennial source.

The reply of the Department is not acceptable as in the absence of adequate attention being paid to sustainability, slip-back of habitations will continue to be a major problem and thus, the long term future of rural water supply and ARWSP would certainly be adversely affected.

#### **1.2.15 Material Management**

Scrutiny of records in two divisions (Ukhrul and Imphal-East) revealed that material valued at Rs. 57.30 lakh – (Rs.39.08 lakh for Ukhrul and Rs. 18.22 lakh for Imphal East) were procured from the Stores Division during April 2003 – August 2006. However, the materials were lying unused for the last three to six years (July 2009). The Division stated (October 2009) that all the materials have been issued and utilized for the respective works. However, no documentary evidence was produced to audit despite audit requisition.

Thus, procurement of material worth Rs.57.30 lakh in excess of requirement had not only resulted in blocking of funds but also hampered coverage of habitations where funds were needed.

#### **1.2.16 Management Information System**

The guidelines of ARWSP provide for establishment of a computerised Management Information System (MIS). Against the approved amount of Rs.224.62 lakh by the GOI for the purpose, an amount of Rs.41.15 lakh was received by the State Government as first instalment. The Department utilized the amount to impart computer training to 78 staff, development of seven office software and for procurement of hardware like server, desktops *etc.* No further fund has been released after the first instalment. As such, computerization of the Department is in the initial stage and the basic objective of MIS is yet to be achieved (March 2009).

**1.2.17 Inventory of assets**

As per guidelines, each village panchayat, block and district is required to maintain a complete inventory of drinking water sources created under ARWSP, indicating the date of commencement and completion of the project, cost of completion, agency responsible for operation and maintenance and other relevant details. The inventory of assets created is also required to be available with the field functionaries of the implementing Department. It was, however, noticed in the test-checked divisions that no records of assets created had been maintained. Thus, due to non availability of the proper records, assets created during implementation of the programme could not be ascertained.

**1.2.18 Swajaldhara**

Swajaldhara is a modified form of Sector Reforms Programme launched on 25 December 2002, and is a part of the transformation of ARWSP from a supply driven model to a participatory, demand driven approach. Under Swajaldhara, the assets created were to be fully owned by the appropriate levels of PRIs, which would have the power to plan, implement, operate and maintain all water and sanitation schemes (hundred *per cent* responsibilities of operation and maintenance by the users).

As per the Swajaldhara Programme, States were required to enter into a Memorandum of Understanding (MOU) with the GOI, but no MOU had been signed as of August 2009. As per information furnished by the test checked divisions, only four projects had so far been implemented under the Swajaldhara in Churachandpur district. The schemes were completed in June 2008. Thereafter, no scheme was undertaken by the Department. Details of the four projects are given below:

**Table 5**

(Rupees in lakh)

Name of the Projects implemented	Funds released by the GOI	Expenditure incurred as of June 2008	Status of the Projects
Rural Drinking Water Supply Project under Swajaldhara at Muallum	43.00	12.46	The projects were completed by June 2008
Rural Drinking Water Supply Project under Swajaldhara at S. Molen		8.62	
Rural Drinking Water Supply Project under Swajaldhara at Dumlien		10.53	
Rural Drinking Water Supply Project under Swajaldhara at B Salvaphai		11.06	

Source: Departmental records

Out of the four schemes, two schemes<sup>21</sup> were physically verified and found to be functioning. Thereafter, no scheme has been taken up under Swajaldhara

<sup>21</sup> i) Rural Drinking Water Supply Project under Swajaldhara at Dumlien  
ii) Rural Drinking Water Supply Project under Swajaldhara at B. Salvaphai

Thus, due to non-submission of proposals for new schemes by the State Government, the GOI had not released any fund for Swajaldhara projects from the year 2007-08 onwards and consequently, it could not avail of the benefit of Central assistance to achieve the objective of the programme.

#### ***1.2.19 Monitoring and Evaluation***

ARWSP Guidelines envisage setting up of Vigilance and Monitoring Committees at State, District and Village level and regular meeting of the Committees are required to be held. No such committees were, however, set up in the test-checked divisions. Reasons for not setting up the Committees were not stated and there was no record to show that monitoring through field inspection was carried out. In addition, no evaluation of the impact of implementation under ARWSP had ever been carried out by the PHED or any Government agency since the beginning of the programme. Thus, monitoring was poor both at the Departmental and Governmental level.

Timely submission of Annual Progress Reports for the period 2004-09 to the Centre could not be verified in audit, as no documentary evidence was produced by the Department. However, the Department stated (October 2009) that the Annual Reports were not sent in time due to non submission of timely reports from the divisions.

The delay in their submission would handicap the Central Government to monitor the progress and quality of the programme and hamper in taking timely appropriate corrective measures.

Internal control is a management tool to ensure that the objectives are achieved in an effective and orderly manner, assets are safeguarded and rules and procedures are complied with. Reconciliation of monthly cash remittances to treasury and encashment of cheques through banks have not been conducted for years together. As a result possible cases of misappropriation of cash during transit and over-encashment of cheques by tempering the original amounts remain undetected. The Chief Engineer's office did not maintain any record on the date and amount of release of Cheque Drawal Authority. Works related records such as Works registers, Contractors' ledger, Works Abstracts and Deposits registers were not maintained. As such, progress of expenditures, amounts due to and recoveries to be made from contractors, progressive expenditures at any point of time and deposits awaiting refund to contractors could not be ascertained. Thus, the Department's internal control mechanism was weak and inadequate.

#### ***1.2.20 Conclusion***

The objective of providing safe drinking water to rural habitations was not fulfilled due to significant deficiencies in conducting of survey and planning being not based on detailed habitation-wise survey and analysis. Due to deficiencies in planning, delay in execution of schemes, poor monitoring and evaluation mechanism, adequate drinking water was yet to be provided to 68 *per cent* habitations as of March 2009. There were cost and time overrun in the execution of the schemes. Inadequate attention to sustainability measures

led to slip-back of schemes. The supply of safe drinking water was not ensured as the water quality monitoring and surveillance programme was not implemented fully. No field testing kits were issued to the Gram-Panchayat level functionaries. The Department did not ensure quality of water supplied to the public which had serious health implications. No Vigilance and Monitoring Committees at State, District and Village level had been set up and impact evaluation of the programme had neither been carried out by the Department nor by the Government.

#### **1.2.21 Recommendations**

- The Department should conduct surveys as per the guidelines to give authentic and reliable data for effective planning.
- The State Government should draw up a comprehensive plan to cover all rural habitations with adequate and safe drinking water, within a specified time frame.
- Financial management should be streamlined so as to utilise the available fund.
- Funds for sustainability and operation and maintenance should be properly utilised to address the issues of sustainability of water sources and systems and slip backs.
- Government should give special attention to covering water quality affected habitations and strengthen water testing facilities.
- Monitoring and evaluation mechanism should be strengthened to ensure timely completion of schemes to avoid cost overruns.